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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,534	12/26/2001	Masashi Miyagawa	35.C16081	8287

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NEW YORK, NY 10112

EXAMINER
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HARAN, JOHN T

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 12/01/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/025,534

Applicant(s)

MIYAGAWA ET AL.

Examiner

John T. Haran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) 6-13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *computer trans JP refs.*

**DETAILED ACTION**

***Election/Restrictions***

1. Applicant's election without traverse of species A1, claims 1-7 in Paper No. 6 is acknowledged.

***Information Disclosure Statement***

2. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 1-7 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because the positioning and heating steps are worded in a confusing manner. It appears that applicant wishes to claim positioning the member and the substrate prior to a heating process and then heating the positioned member and substrate to cure the activated liquid adhesive. It is suggested to reword the claim

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as follows: - - positioning said member and said substrate prior to a heating process; and heating said positioned member and substrate to cure said activated liquid-like adhesive - -.

In claim 6, it appears the word "ryas" should be - - rays - -.

Claim 7 recites the limitation "the beam". There is insufficient antecedent basis for this limitation in the claim. It appears claim 7 should depend from claim 6 instead of claim 1.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1, 3, and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-188873 in view of Wilfong (U.S. Patent 5,262,232).

JP 11-188873 is directed to a method of making an ink jet head wherein a nozzle plate with discharge ports for discharging ink is bonded to a substrate with piezo-electric members (energy generating elements) with a liquid-like adhesive that comprises a mixture of heat-hardening and ultraviolet rays hardening adhesive (Paragraphs 0008, and 0011-0012 of computer translation). The adhesive comprises a mixture of acrylic adhesive and epoxy heat-hardened adhesive and the adhesive is placed on the substrate, the nozzle plate is positioned on the substrate, the adhesive is irradiated with uv rays to harden the acrylic adhesive and then the adhesive is heated to harden the

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epoxy (Paragraphs 0027-0030 of computer translation). The reference is silent towards the adhesive having an ultraviolet curing cation polymeric starter.

Wilfong et al teaches an acrylate-epoxy adhesive wherein the adhesive is cured first with uv rays and then with heat and that the composition contains a cationic curing agent such as aromatic onium salts with free radical initiators activated by electromagnetic radiation (uv) (Column 9, lines 45-51 and Column 14, lines 11-55). One skilled in the art would have readily appreciated using an known acrylic-epoxy adhesive mixture in the method of JP 11-188873 and that only the expected results would be achieved, i.e. that the uv curing of the acrylic adhesive would activate the cationic polymeric starter. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a known mixture of acrylic adhesive and epoxy adhesive, one containing a uv curing cation polymeric starter, in the method of JP 11-188873 as taught in Wilfong et al.

Regarding claim 3, Wilfong et al teaches using an aromatic onium salt (Column 14, line 28).

Regarding claim 6, JP 11-188873 teaches applying uv at a wavelength of 365 nm.

7. Claims 2, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-188873 in view of Wilfong (U.S. Patent 5,262,232) as applied to claims 1, 3, and 6 above, and further in view of Miyazaki et al (U.S. Patent 6,652,702).

JP 11-188873 and Wilfong are relied upon for the teachings noted above.

Regarding claim 2, JP 11-188873 is silent towards the thickness of the adhesive, however it is known to have an adhesive thickness of less than 10um as shown for example in Miyazaki et al (Column 10, lines 18-19). It would have been obvious to use a known thickness in the method of JP 11-188873 as suggested in Miyazaki et al.

Regarding claim 5, it is well known and conventional to use silicon as the material as shown for example in Miyazaki et al (Column 5, lines 65-66). It would have been obvious to use a well known and conventional material.

Regarding claim 7, one skilled in the art would have readily appreciated having either the member or the substrate be opaque to the uv rays in order to irradiate the adhesive once the member and substrate are positioned in order to facilitate curing, as is well known and conventional in the art, as shown for example in Miyazaki et al (Column 11, lines 62-65). It would have been obvious for the member or substrate to be opaque to the uv rays in the method of JP 11-188873 as is well known in the art as evidenced by Miyazaki et al.

Applicant cannot rely upon the foreign priority papers to overcome this rejection because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

8. Claims 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-188873 in view of Wilfong (U.S. Patent 5,262,232) as applied to claims 1, 3, and 6 above, and further in view of the admitted prior art.

JP 11-188873 and Wilfong are relied upon for the teachings noted above and both are silent towards including an agent in the adhesive for providing flexibility, however such is well known and conventional in the art as shown for example in the admitted prior art (Specification, page 14, lines 15-23). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include an agent for providing flexibility in the adhesive as is well known and conventional in the method of JP 11-188873, as suggested in the admitted prior art.

### ***Conclusion***

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miyazaki et al (U.S. Patent 6,652,702) is directed to a method of making an ink jet head wherein a liquid adhesive is placed on a discharge port plate, a recording element base plate with energy generating elements is positioned on the discharge port plate, the adhesive is irradiated with uv rays to cure the adhesive and then is heated to further cure the adhesive (Column 11, line 52 to Column 12, line 37). Miyazaki et al is silent towards the particular type of adhesive utilized in the method.

JP 11-179923 is directed to a method of making an ink jet printer head wherein liquid adhesive is applied to printer head main part with energy generating elements, an orifice plate with discharge ports is position on the main part and the adhesive is first uv cured and then heat cured (Paragraphs 0006-0007 of computer translation). JP 11-179923 is silent towards the particular type of adhesive utilized in the method.

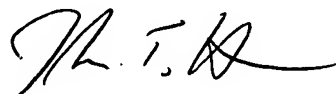
Crivello (U.S. Patent 4,108,747) teaches an epoxy resin with uv curing cation polymeric starter such as an aromatic onium salt wherein the adhesive is irradiated with uv to activate the adhesive and is then subsequent cured with thermal treatment (Column 1, line 45 to Column 2, line 40).

Okhuma et al (U.S. Patent 6,455,112) is cited as teaching an epoxy resin with a cationic initiator such as an aromatic onium salt for coating the walls of an ink flow path (Column 3, lines 9-40).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **John T. Haran** whose telephone number is **(703) 305-0052 or (571) 272-1217 as of 12/19/03**. The examiner can normally be reached on M-Th (8 - 5) and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (703) 308-3853. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



John T. Haran  
Examiner  
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